

REMARKS

Entry of the foregoing, reexamination and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

By the above amendments, the abstract has been amended to contain a single paragraph. The abstract has also been amended for readability purposes by reciting that the coloring matter is at least one yellow hue coloring matter. Claims 3-5, 7-10, 12 and 13 have been canceled. Claims 1, 2, 6, 11 and 14 have been amended for readability purposes by deleting parentheses and/or brackets therefrom. Claim 1 has further been amended for readability purposes by reciting the word "or" between "alkyl group," and "an aralkyl group."

Claims 1, 2 and 14 have been amended to recite that in the formula (1) compound, "R₁ represents a hydrogen atom or an unsubstituted or substituted alkyl group having 5 or less carbon atoms, R₂ represents a hydrogen atom and R₃ represents -CONR₄R₅ in which each of R₄ and R₅ independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group." Support for these amendments can be found in the specification at least at page 19, lines 13-24.

Claims 1, 6, 11 and 14 have been amended to recite that in the formula (2) compound, "at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms," "R₁₂ represents a linear or branched alkyl group having 4 or more carbon atoms," and "R₁₃ represents a linear or branched alkyl group having 8 or more carbon atoms." Support for these amendments can be found in the specification at least at page 24, lines 16-23.

Turning to the Official Action, the abstract stands objected to for the reasons set forth at page 2 of the Official Action. This objection has been obviated by the above amendment of the abstract. Accordingly, withdrawal of this objection is respectfully requested.

Claims 1-15 stand rejected under 35 U.S.C. §112, second paragraph, for the reasons set forth at page 3 of the Official Action. In response thereto, claims 1, 2, 6, 11 and 14 have been amended to delete parentheses and/or brackets therefrom. Accordingly, withdrawal of the §112, second paragraph, rejection is respectfully requested.

Claims 9 and 10 stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese patent document No. 06009891 (*JP '891*) or U.S. Patent No. 5,359,075 (*Ohyama et al*). This rejection is moot in light of the cancellation of claims 9 and 10.

Claims 11-13 stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese patent document No. 08034933 (*JP '933*), Japanese patent document No. 06059510 (*JP '510*) or U.S. Patent No. 4,514,226 (*Leoffler*). Claims 12 and 13 have been canceled by the above amendments. Withdrawal of this rejection as it is applied to the remaining rejected claim 11 is respectfully requested for at least the following reasons.

JP '933 fails to disclose each feature of one aspect of the present invention as defined by claim 11. For example, *JP '933* does not disclose the claimed formula (2) compound wherein R_{12} represents a linear or branched alkyl group having 4 or more carbon atoms. In stark contrast with the present invention, the formula (I) compound disclosed by *JP '933* contains a methyl group in the position corresponding to R_{12} of the claimed formula (2) compound. Certainly, a methyl group is not the same as a linear or branched alkyl group having 4 or more carbon atoms.

Furthermore, *JP '933* fails to disclose the claimed formula (2) compound wherein at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms, as recited in claim 11. In this regard, X₁ in the formula (I) compound of *JP '933* corresponds in position to the R₇ substituent in the claimed formula (2) compound. However, *JP '933* appears to disclose that X₁ is a hydrogen atom, a halogen atom, a cyano group or a nitro group (machine translation of *JP '933* at paragraph 6). Clearly, the X₁ substituent of *JP '933* is not the same as a -CONR₁₆R₁₇ group having 17 or more carbon atoms.

JP '933 further discloses that the formula (I) compound thereof contains a Y substituent. In this regard, the machine translation of *JP '933* at paragraph 6 discloses an extensive list of Y substituents. However, *JP '933* does not appear to disclose a -CONR₁₆R₁₇ group having 17 or more carbon atoms in the list of Y substituents. Further, each of the compounds disclosed in Table 1 of *JP '933* does not contain a -CONR₁₆R₁₇ group having 17 or more carbon atoms at the X₁ or Y positions. As such, it is clear that *JP '933* fails to disclose the claimed formula (2) compound wherein at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms, as recited in claim 11.

Moreover, there is simply no disclosure of a single compound which contains the combination of (1) the R₁₂ substituent being a linear or branched alkyl group having 4 or more carbon atoms, (2) at least one of the R₇ to R₉ substituents being -CONR₁₆R₁₇ having 17 or more carbon atoms, and (3) the R₁₃ substituent being a linear or branched alkyl group having 8 or more carbon atoms, as recited in claim 11. As such, *JP '933* does not constitute an anticipation of one aspect of the present invention as defined by claim 11.

In addition, *JP '510* fails to disclose each feature of the inventive pyridone azo compound of claim 11. In this regard, *JP '510* discloses a formula (1) compound in which R_1 and R_2 correspond in position to R_{12} and R_{13} of the claimed formula (2) compound. However, *JP '510* does not disclose a single formula (1) compound which contains the combination of (1) the R_1 substituent being a linear or branched alkyl group having 4 or more carbon atoms, and (2) the R_2 substituent being a linear or branched alkyl group having 8 or more carbon atoms. The compounds set forth in Table 1 of *JP '510* fail to include a linear or branched alkyl group having 4 or more carbon atoms at R_1 . In addition, the Table 1 compounds do not include a linear or branched alkyl group having 8 or more carbon atoms at R_2 . And certainly, none of the compounds disclosed at Table 1 of *JP '510* include both a linear or branched alkyl group having 4 or more carbon atoms at the position corresponding to R_{12} in the claimed formula (2) compound, and a linear or branched alkyl group having 8 or more carbon atoms at the position corresponding to R_{13} in the claimed formula (2) compound.

From the above, it is apparent that *JP '510* does not constitute an anticipation of one aspect of the present invention as defined by claim 11.

Leoffler fails to disclose each feature of the inventive pyridone azo compound of claim 11. For example, *Leoffler* fails to disclose the claimed formula (2) compound wherein R_{12} represents a linear or branched alkyl group having 4 or more carbon atoms. By comparison, *Leoffler* discloses a general formula I in which substituent "B" corresponds in position to R_{12} of the claimed formula (2) compound. However, *Leoffler* discloses that substituent "B" is hydrogen or C_1 - C_3 alkyl (*Leoffler* at col. 1, lines 20 and 21). Further, each of the exemplary compounds disclosed at columns 4-11 of *Leoffler* contains a methyl group in the position corresponding to

R_{12} of the claimed formula (2) compound. There is simply no disclosure of an alkyl group having 4 or more carbon atoms at the position corresponding to R_{12} in the claimed formula (2) compound.

As such, *Leoffler* does not constitute an anticipation of one aspect of the present invention as defined by claim 11. Accordingly, withdrawal of this §102(b) rejection is respectfully requested.

Claims 1-5 and 9 stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese patent document No. 11131000 (*JP '000*). Claims 3-5 and 9 have been canceled by the above amendments. Withdrawal of this rejection as it is applied to the remaining rejected claims 1 and 2 is respectfully requested for at least the following reasons.

JP '000 does not disclose each feature of one aspect of the present invention as defined by amended claim 1. For example, *JP '000* does not disclose the claimed formula (1) compound wherein R_3 represents $-CONR_4R_5$ in which each of R_4 and R_5 independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group, as recited in claim 1. In this regard, the Y^{29} substituent of the formula (5) compound disclosed by *JP '000* corresponds in position to R_3 of the claimed formula (1) compound. However, it appears that *JP '000* does not even disclose that Y^{29} represents a $-CONR_4R_5$ group, let alone that each of R_4 and R_5 independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group.

Furthermore, the nitrogen atom in the claimed formula (1) compound is bonded to a hydrogen atom, and the bicyclic structures are bonded by a double bond. In stark contrast with

this aspect of the present invention, the corresponding nitrogen atom of the formula (5) compound disclosed by *JP '000* is not bonded to a hydrogen atom, and the bicyclic structures are bonded by a single bond. As such, it is apparent that *JP '000* does not disclose the formula (1) compound recited in claim 1. Accordingly, withdrawal of this §102(b) rejection is respectfully requested.

Claims 1, 6-8, 14 and 15 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,031,019 (*Tsutsumi et al*) or U.S. Patent No. 6,379,443 (*Komatsu et al*) either of which in view of *JP '933*. Claims 7 and 8 have been canceled by the above amendments. Withdrawal of this rejection as it is applied to the remaining rejected claims 1, 6, 14 and 15 is respectfully requested for at least the following reasons.

Tsutsumi et al and *Komatsu et al* fail to disclose or suggest each feature of aspects of the present invention as defined by claims 1 and 14. The Patent Office has relied on *Tsutsumi et al* for disclosing "a water-based ink jet ink wherein the ink comprises polymer particles colored with oil-soluble dye" (Official Action at page 8). In addition, *Komatsu et al* has been relied upon for disclosing a "water-based ink jet ink comprising colored polymer comprising polymer and oil-soluble dye in the form of an emulsion wherein the colored polymer is dispersed in the water medium" (Official Action at page 8). However, as acknowledged by the Patent Office, neither *Tsutsumi et al* nor *Komatsu et al* discloses or suggests the coloring matter recited in claims 1 and 14.

JP '933 fails to cure the above-described deficiencies of *Tsutsumi et al* and *Komatsu et al*. For example, like *Tsutsumi et al* and *Komatsu et al*, *JP '933* fails to disclose or suggest the claimed formula (2) compound wherein R_{12} represents a linear or branched alkyl group having

4 or more carbon atoms, as recited in claims 1 and 14. By comparison, the formula (I) compound disclosed by *JP* '933 contains a methyl group in the position corresponding to R₁₂ in the claimed formula (2) compound. There is simply no motivation or suggestion to replace the methyl group disclosed by *JP* '933 with the claimed linear or branched alkyl group having 4 or more carbon atoms.

Furthermore, *JP* '933 fails to disclose or suggest the claimed formula (2) compound wherein at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms, as recited in claims 1 and 14. In this regard, X₁ of the formula (I) compound of *JP* '933 corresponds in position to the R₇ substituent of the claimed formula (2) compound. *JP* '933 appears to disclose that X₁ is a hydrogen atom, a halogen atom, a cyano group or a nitro group. No motivation or suggestion exists to replace the X₁ substituent of *JP* '933 with a -CONR₁₆R₁₇ group having 17 or more carbon atoms.

JP '933 further discloses that the formula (I) compound thereof contains a Y substituent selected from a list of substituents set forth at paragraph 6 of *JP* '933. However, such list of substituents disclosed by *JP* '933 does not appear to include a -CONR₁₆R₁₇ group having 17 or more carbon atoms. Moreover, each of the compounds disclosed in Table 1 of *JP* '933 does not contain a -CONR₁₆R₁₇ substituent having 17 or more carbon atoms at the X₁ or Y positions. As such, it is clear that *JP* '933 fails to disclose or suggest the claimed formula (2) compound wherein at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms.

Moreover, there is no recognition or suggestion of a single compound which contains the combination of (1) the claimed R₁₂ substituent being a linear or branched alkyl group having 4

or more carbon atoms, and (2) at least one of the R₇ to R₉ substituents being -CONR₁₆R₁₇ having 17 or more carbon atoms.

As discussed in the instant specification, it can be beneficial for an ink for ink-jet recording to have a high resistance to light. In this regard, Applicants have surprisingly and unexpectedly discovered that the pyridone azo compound of formula (2), as now claimed, wherein at least one of R₇ to R₉ is -CONR₁₆R₁₇ has 17 or more carbon atoms, R₁₂ represents a linear or branched alkyl group having 4 or more carbon atoms, and R₁₃ represents a linear or branched alkyl group having 8 or more carbon atoms, can exhibit excellent light fastness properties.

Referring to the instant specification at pages 30 and 31 (Table 2), coloring matter Nos. 118, 119, 125-127 and 129-131 were formed which are encompassed by the claimed pyridone azo compound. Each of these exemplary coloring matter compounds was used to prepare an ink, and the light fastness of images formed from each of the inks was measured. As can be seen from pages 62 and 70 of the specification, each of the inks formed from the exemplary coloring matter Nos. 118, 119, 125-127 and 129-131 exhibited an OD₂ of 90 to 100%. The combination of *Tsutsumi et al*, *Komatsu et al* and *JP '933* fails to recognize or suggest such advantages of inks containing the claimed pyridone azo compound.

Therefore, it is clear that the inventive aqueous ink and resin fine particle of claims 1 and 14 are not obvious over the combination of *Tsutsumi et al* and *Komatsu et al* in view of *JP '933*. Accordingly, withdrawal of this §103(a) rejection is respectfully requested.

Claims 1-5, 14 and 15 stand rejected under 35 U.S.C. §103(a) as being obvious over *Tsutsumi et al* or *Komatsu et al*, either of which in view of *Ohyama et al*. Claims 3-5 have been

canceled by the above amendments. Withdrawal of this rejection as it is applied to the remaining rejected claims 1, 2, 14 and 15 is respectfully requested for at least the following reasons.

As discussed above, the Patent Office has acknowledged that *Tsutsumi et al* and *Komatsu et al* fail to disclose or suggest the inventive coloring matter recited in claims 1 and 14 (Official Action at page 10).

Ohyama et al fails to cure the above-described deficiencies of *Tsutsumi et al* and *Komatsu et al*. For example, like *Tsutsumi et al* and *Komatsu et al*, *Ohyama et al* fails to disclose or suggest the claimed formula (1) compound wherein R_3 represents $-\text{CONR}_4R_5$ in which each of R_4 and R_5 independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group, as recited in claims 1 and 14. In this regard, *Ohyama et al* discloses a formula (1) compound containing an R_3 substituent which corresponds in position to R_3 of the claimed formula (1) compound. However, *Ohyama et al* further discloses the following at column 2, lines 17-23:

... each of R_3 and R_4 is a hydrogen atom, alkyl group, N-substituted aminocarbonyl group, or a substituted heterocyclic ring having two or more ring atoms of one or more kinds selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, and R_3 and R_4 may be bonded to each other to form a ring ...

Clearly, *Ohyama et al* has no disclosure or suggestion that the R_3 substituent thereof represents a $-\text{CONR}_4R_5$ group, i.e., an N,N-dialkylaminocarbonyl group, let alone such $-\text{CONR}_4R_5$ group in which each of R_4 and R_5 independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group.

Applicants have surprisingly and unexpectedly discovered that the quinophthalone compound represented by formula (1), as now claimed, can exhibit excellent light fastness

properties. Referring to the instant specification at page 21 (Table 1), coloring matter Nos. 1, 2, 28-30 and 33 were formed which are encompassed by the claimed quinophthalone compound. Each of these exemplary coloring matter compounds was used to prepare an ink, and the light fastness of each of images formed from such inks was measured. As can be seen from pages 62, 67 and 68 of the specification, each of the images formed from inks containing the exemplary coloring matter Nos. 2, 28-30 and 33 exhibited an OD₂ of 90 to 100%. *Tsutsumi et al, Komatsu et al* and *Ohyama et al* do not have any recognition or suggestion of such advantages of inks containing the claimed quinophthalone compound.

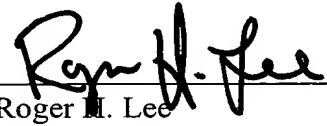
As such, the inventive aqueous ink and resin fine particle of claims 1 and 14 are not obvious over the combination of *Tsutsumi et al* and *Komatsu et al* in view of *Ohyama et al*. Accordingly, withdrawal of this §103(a) rejection is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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Date: October 28, 2002



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TC 1700

Application No. 09/806,340

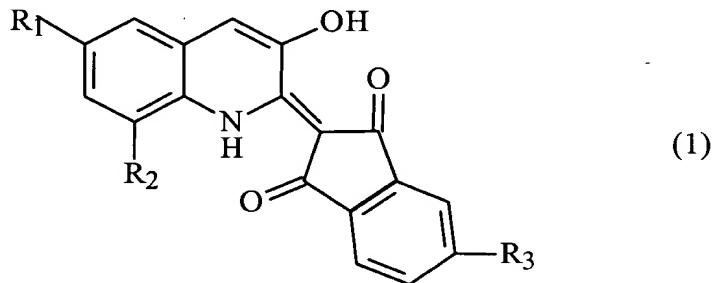
Attorney's Docket No. 018793-243

Attachment to AMENDMENT dated October 28, 2002

Marked-up claims 1, 2, 6, 11 and 14

1. (Amended) Aqueous ink for ink-jet recording which contains at least a water-insoluble coloring matter, water and a resin as main components and takes the form of an emulsion, the coloring matter being at least one yellow hue coloring matter selected from the group consisting of

a quinophthalone compound represented by the formula (1);



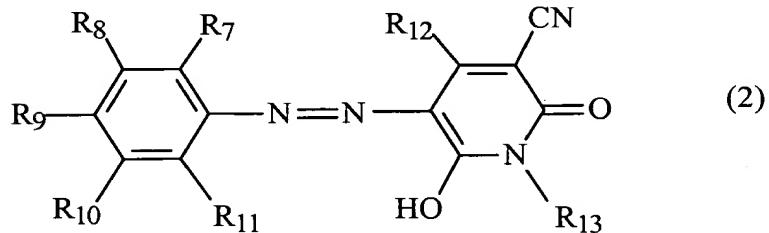
wherein

[each of R₁ to R₃ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, -CONR₄R₅, or -COOR₆ (in which each of R₄ to R₆ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group), and all of R₁ to R₃ are not a hydrogen atom at the same time,] R₁ represents a hydrogen atom or an unsubstituted or substituted alkyl group having 5 or less carbon atoms, R₂ represents a hydrogen atom and R₃ represents -CONR₄R₅ in which each of R₄ and R₅ independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group, and

a pyridone azo compound represented by the formula (2);

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Marked-up claims 1, 2, 6, 11 and 14



wherein

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ [(]in which R₁₄ and R₁₅ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an aralkyl group[)], -COX₁ [(]in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ [(]in which each of R₁₆ and R₁₇ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group[)]], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ [(]in which each of X₂ to X₄ independently, represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3[)], provided that at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms,

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Marked-up claims 1, 2, 6, 11 and 14

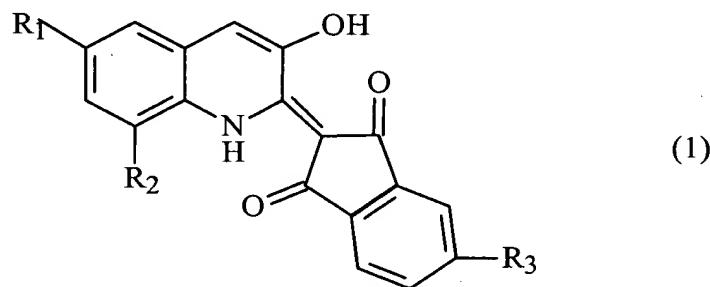
R_{12} represents [an unsubstituted or substituted alkyl group] a linear or branched alkyl group having 4 or more carbon atoms,

R_{13} represents [an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group] a linear or branched alkyl group having 8 or more carbon atoms.

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Marked-up claims 1, 2, 6, 11 and 14

2. (Amended) The aqueous ink for ink-jet recording according to claim 1 wherein the yellow hue coloring matter is a quinophthalone compound represented by the formula (1);



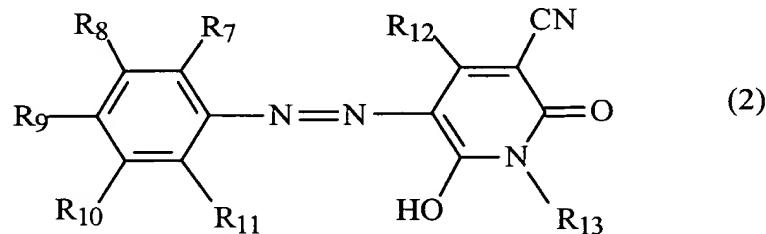
wherein

[each of R₁ to R₃ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, -CONR₄R₅, or -COOR₆ (in which each of R₄ to R₆ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group), and all of R₁ to R₃ are not a hydrogen atom at the same time] R₁ represents a hydrogen atom or an unsubstituted or substituted alkyl group having 5 or less carbon atoms, R₂ represents a hydrogen atom and R₃ represents -CONR₄R₅ in which each of R₄ and R₅ independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group.

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Marked-up claims 1, 2, 6, 11 and 14

6. (Amended) The aqueous ink for ink-jet recording according to claim 1 wherein the yellow hue coloring matter is a pyridone azo compound represented by the formula (2);



wherein

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ [(]in which each of R₁₄ and R₁₅ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an aralkyl group[)], -COX₁ [(]in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ [(]in which each of R₁₆ and R₁₇ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group[)]], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄, [(]in which X₂ to X₄ represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3[)], provided that at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms,

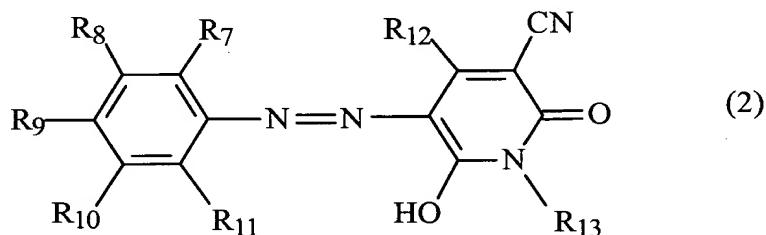
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Marked-up claims 1, 2, 6, 11 and 14

R₁₂ represents [an unsubstituted or substituted alkyl group] a linear or branched alkyl group having 4 or more carbon atoms,

R₁₃ represents [an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group] a linear or branched alkyl group having 8 or more carbon atoms.

11. (Amended) A pyridone azo compound represented by the formula (2);



wherein

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ [(]in which each of R₁₄ and R₁₅ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an aralkyl group[)], -COX₁ [(]in which X₁ represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ [(]in which R₁₆ and R₁₇ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl

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Marked-up claims 1, 2, 6, 11 and 14

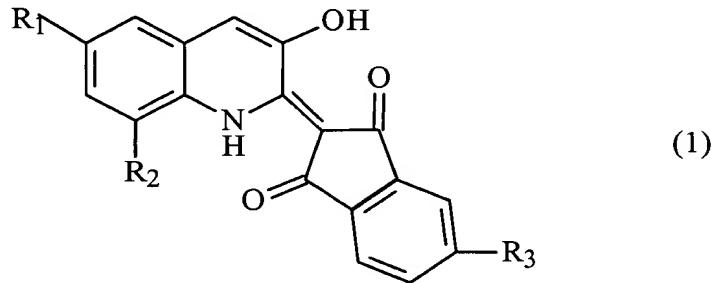
group[]], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ [(in which X₂ to X₄ represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3[]), provided that at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms,

R₁₂ represents [an unsubstituted or substituted alkyl group] a linear or branched alkyl group having 4 or more carbon atoms,

R₁₃ represents [an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group] a linear or branched alkyl group having 8 or more carbon atoms.

14. (Amended) A resin fine particle colored by at least one yellow hue coloring matter selected from the group consisting of;

a quinophthalone compound represented by the formula (1);



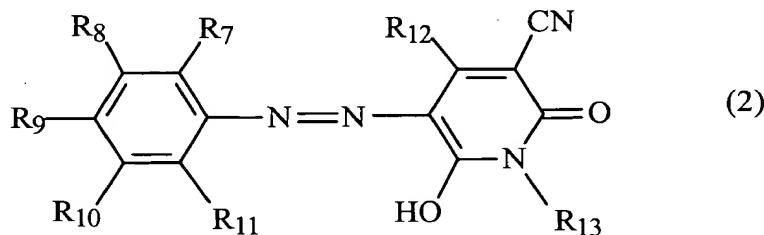
wherein

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Marked-up claims 1, 2, 6, 11 and 14

[each of R₁ to R₃ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, -CONR₄R₅, or -COOR₆ (in which each of R₄ to R₆ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an unsubstituted or substituted aryl group), and all of R₁ to R₃ are not a hydrogen atom at the same time] R₁ represents a hydrogen atom or an unsubstituted or substituted alkyl group having 5 or less carbon atoms, R₂ represents a hydrogen atom and R₃ represents -CONR₄R₅ in which each of R₄ and R₅ independently represents an unsubstituted or substituted alkyl group having 6 or more carbon atoms or an unsubstituted or substituted aryl group, and

a pyridone azo compound represented by the formula (2);



wherein

each of R₇ to R₁₁ independently, represents a hydrogen atom, a halogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryl group, an unsubstituted or substituted aryloxy group, a hydroxyl group, -NR₁₄R₁₅ [(in which each of R₁₄ and R₁₅ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, or an aralkyl group)], -COX₁ [[in which X₁

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Marked-up claims 1, 2, 6, 11 and 14

represents an unsubstituted or substituted alkoxy group, an unsubstituted or substituted aryloxy group, or -NR₁₆R₁₇ [(]in which each of R₁₆ and R₁₇ independently, represents a hydrogen atom, an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group[)], -COO(CH₂)_n-COX₂, -OCOX₃, or -NHCOX₄ [(]in which X₂ to X₄ represents an unsubstituted or substituted alkyl group, an aralkyl group, an unsubstituted or substituted aryl group, an unsubstituted or substituted alkoxy group, or an unsubstituted or substituted aryloxy group, and n is an integer of 1 to 3[]), provided that at least one of R₇ to R₉ is -CONR₁₆R₁₇ having 17 or more carbon atoms,

R₁₂ represents [an unsubstituted or substituted alkyl group] a linear or branched alkyl group having 4 or more carbon atoms,

R₁₃ represents [an unsubstituted or substituted alkyl group, an aralkyl group, or an unsubstituted or substituted aryl group] a linear or branched alkyl group having 8 or more carbon atoms.



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Attorney's Docket No. 018793-243

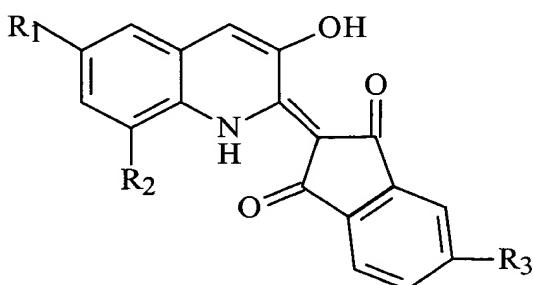
Attachment to AMENDMENT dated October 28, 2002

Marked-up abstract

Aqueous ink for ink-jet recording which contains at least a water-insoluble coloring matter, water and a resin as main components and which takes the form of an emulsion, in which [is characterized by containing] the coloring matter is at least one yellow hue coloring matter selected from the group consisting of a quinophthalone compound represented by the formula (1);

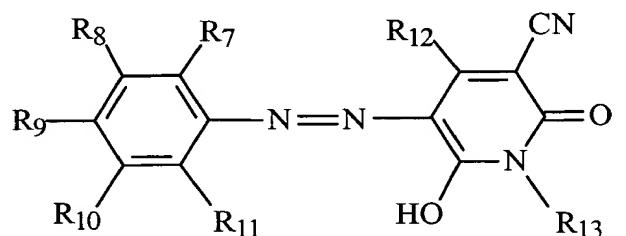
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(1)

and a pyridone azo compound represented by the formula (2);



(2)

The ink is ink for ink-jet recording having excellent light resistance and storage stability, and enables formation of a high quality image without blotting, and obtained recording image is excellent in water resistance as ink for ink-jet recording.